

terested in having an independent (Krivosheina) data set to test their phylogenetic hypotheses.

The format of the book is dissatisfactory. For example, apparently there was no agreement on whether an abstract should be provided at all and, if so, where it should be placed. The book is not organized by subject matter. Instead the papers appear in the alphabetical order of the authors' names. The quality of the printing is surprisingly uneven. Idema's color coded plates are very competently reproduced (however, rumors have it that they were printed in Canada). On the other hand the book was printed using photo offset and a more attractive font would have made quite a difference. The quality of the paper is rather poor and the photos and some text on pages adjacent to illustrations are printed on a different kind. Considering the very high price of \$82, more attention should have been paid to editorial details and the layout.—*Rudolf Meier, Department of Entomology, Comstock Hall, Cornell University, Ithaca, New York 14853, USA and Institut für Zoologie, FU Berlin, AG Evolutionsbiologie, Königin-Luise-Str. 1-3, 14195 Berlin, GERMANY.*

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**Nymphs of North American Stonefly Genera (Plecoptera).**—Kenneth W. Stewart and Bill P. Stark with illustrations by Jean A. Stanger. 1988. Thomas Say Foundation, v. 12. University of North Texas Press, Denton, Texas. xiii + 460 pp. \$35.50 paper.

Some 57 years after the publication of Claassen's (1931) "Plecoptera Nymphs of North America (North of Mexico)," the subject is updated with Stewart and Stark's "Nymphs of the North American Stonefly." With this recent study, which includes literature published through 1987, the total number of North American Plecoptera is elevated from 21 to 99. In terms of content, purpose, and style, Stewart and Stark's book is reminiscent of Wiggins' elegant book on the genera of North American caddisfly larvae (1977). Stewart and Stark, however, present more extensive and comprehensive information especially on the subjects of ecology, behavior and life cycles.

The introductory chapters of this book include sections on classification and phylogeny, biogeography, nymph ecology and behavior, morphology, and adaptation. The phylogeny section lists several competing phylogenies of stoneflies, but mainly discusses studies by Zwick (1973, 1980) and Nelson (1984). Stewart and Stark advocate Zwick's phylogeny over Nelson's which is more recent and modern, i.e., computer assisted. Their preference for Zwick's classification amounts to its being "the most complete" which may or may not be the most natural classification. They acknowledge, however, that none of the current plecopteran classification systems are completely satisfactory due to absence of a thorough analysis of both larval and adult characters.

The authors put a great deal of emphasis on the ecology and behavior chapter which includes many tables and graphs. This chapter specifically covers: life cycles and voltinism, egg development, nymphal growth and development, food habits, feeding, trophic interactions, habitats and space partitioning, secondary production,

and stonefly management. The literature review on these subjects is extensive. The morphology section, especially the character discussion using SEM pictures and drawings of mouthparts, is potentially useful and readily available for future phylogenetic analysis.

The final chapters (2/3) of this book are devoted to the systematics of North American Plecoptera. These chapters start with a key to the families of the nymphs of North American Plecoptera. Each family begins with an introductory section followed by a generic key. All the genera are arranged alphabetically. In addition to life history presented in the introductory chapters, the authors provide detailed information regarding previous nymph descriptions and illustrations, nymph morphology and biology for each genus.

There is no doubt that a study such as this could only be successfully presented with appropriate illustrations. There are 99 full pages of habitus pictures, one for each genus, and 99 additional illustrations of mouth parts, gills, cerci, legs, and other characteristics. Most of these were drawn by Jean A. Stanger.

Individually habitus pictures are beautifully drawn, but collectively, they lack the consistency of clarity and style that we see in Wiggins' wonderfully presented pen and ink work. Some seem to show more detail while others are too light (e.g., figs. 8.13, 9.9) which render them much paler in comparison. One habitus drawing (fig. 11.13) by R. F. Surdick stands out because it is very different from the remaining habitus drawings.

Overall, there are a few minor deficiencies pertaining to the drawings. For example, the tips of the antennae and cerci of each habitus are cut off and therefore do not show actual length in reference to total body length. Additionally, it is not clear why the authors placed separate drawings of head and pronotum for most genera when the same features are shown, generally without much difference, in the habitus drawings (e.g., figs. 14.1 and 14.2A, and 14.19 and 14.20A). Some of the slight differences between the habitus, and head and pronotal drawings (e.g., figs. 7.9 and 7.10A) may be an artifact of the different technique used, i.e., carbon dust vs. pen and ink, respectively. In contrast, some of the differences between habitus, and head and pronotal drawings are clear and probably intended to show variation. These drawings, however, are showing variations within species which is not discussed since it is beyond the scope of this book.

Some nomenclatural information is either missing or difficult to find. For example, references for date and source of the original descriptions are missing for each genus and type species. Although a general discussion of nomenclature for each family and a list of name changes for each genus are provided, it is difficult to trace when a particular taxonomic change in rank and name is made and by whom. I noticed only one typographic error, the table 2.1, family Perlodinae should be corrected as Perlodidae.

In spite of these minor deficiencies, this book is highly recommended and a welcome addition to the freshwater sciences. It is, undoubtedly, a useful and comprehensive reference book regarding nymph identification, taxonomy, classification, ecology, behavior, and natural history of Plecoptera focusing mainly on North American fauna. The authors' many years of effort in rearing nymphs both in the lab and in their natural habitat should be commended. Their use of different methods for rearing and gathering new information on the biology of plecopterans are very encouraging and hopefully will stimulate interest in other biologists. Hopefully, this

book will stimulate further research in plecopteran phylogeny, as well as other related disciplines.—*Sule Oygur, Dept. of Entomology. American Museum of Natural History, New York, New York 10024-5192.*

#### LITERATURE CITED

- Claassen, P. W. 1931. Plecoptera Nymphs of America (North of Mexico). The Thomas Say Foundation. Charles C Thomas, Springfield, IL, 199 pp.
- Nelson, C. H. 1984. Numerical cladistic analysis of phylogenetic relationships in Plecoptera. *Ann. Ent. Soc. Am.* 77:466–473.
- Wiggins, G. B. 1977. Larvae of the North American Caddisfly Genera (Trichoptera). Univ. of Toronto Press, 401 pp.
- Zwick, P. 1973. Insecta: Plecoptera. Phylogenetisches System und Katalog. *Das Tierreich* 94. Walter de Gruyter, Berlin, 465 pp.
- Zwick, P. 1980. Plecoptera (Steinfliegen). Pages 1–115 in: *Handbuch der Zoologie* 26. Walter de Gruyter, Berlin.

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**Verzeichnis der Sandlaufkäfer der Welt (Coleoptera, Cicindelidae [Checklist of the Tiger Beetles of the World (Coleoptera, Cicindelidae)]).**—Jürgen Wiesner, 1993. Hago-Druck, Karlsrud-Ittersbach Verlag Erna Bauer, Siedlung 15, 7538 Keltern-Weiler, Germany, 364 pp. Price: US \$75.00 plus \$5.00 postage and handling from Sciences Naturelles, 2 rue Mellene, 60200 Venette, France.

My first reaction to reading the announcement of Jürgen Wiesner's catalogue was to question if our present state of knowledge of tiger beetle systematics and distribution warranted so ambitious a project. My answer? Yes and no. Not since Walther Horn's treatise (1908, 1910, 1915, *Genera Insectorum* 82: 487 pp.), monumental still, has anyone attempted a work of such scope. Wiesner's work is a foundation on which to build.

Wiesner's catalogue consists of a Foreword in German and English (p. 6), a systematic section (pp. 7–230), literature citations into 1992 (pp. 231–274), an alphabetical index (pp. 275–343), and an index (pp. 344–364).

The most positive uses of the catalogue are its ease of use and concentration of information. Different print sizes and spacing permit easy scanning. Each section is a high point: the systematic section with references, subspecies, synonymies, and ranges; the literature section with citations through at least early 1992; the alphabetical index with all names cited from family to subspecies and varieties, recognized names in bold print and cross-referenced to the associated genus or species, and synonyms in small print and cross-referenced to their proper taxon; and a systematic index which serves excellently as a checklist.

There are some detractions in the book, some that should be corrected in future editions, and some that counter my own personal preference. None interferes with the book's overall excellence.

1. Typographical errors are few so I am uncertain if spellings such as *Platychile*, *Picnochile*, and *Ropaloteres* are lapsi or intended as I have neither researched the original citations nor am I fluent in the niceties of Greek etymology. The spelling